



United States Department of Agriculture
Natural Resources Conservation Service

Water Management Enhancement Activity – Salinity Management

Water Management Resource Concern

All major irrigation water sources contain dissolved salts. These salts include a variety of natural occurring dissolved minerals, which can vary with location, time, and water source. Excessive total salt concentration in soil can have detrimental effects on plant health and/or soil conditions.

High EC soil readings indicate potential problems with soil salinity that require attention. A good salinity management program is needed to determine future courses of action for irrigation system design, application of irrigation water, and cropping alternatives.

Benefits

Spatial variability of salinity in a field requires detailed management strategies. EC soil and water testing or Electro-magnetic Induction (EMI) mapping can provide site specific precision spatial variability information of soil salinity. Appropriate salinity management alternatives can be developed using information from the tests and/or maps.

Criteria for Salinity Management Enhancement Activity

This enhancement requires the implementation of a salinity management program that uses **1 or more** of the following management activities:

- Conduct and Utilize EC Soil and Water Test Results
- Conduct Electro-Magnetic Induction (EMI) mapping.

1. Conduct and Utilize EC Soil and Water Test Results

Salinity assessment requires the electrical conductivity of the irrigation water and saturated soil paste to determine its affect on yield and crop quality. The test results are utilized for irrigation system design, application of irrigation water, and cropping alternatives.

2. Conduct Electro-Magnetic Induction (EMI) mapping.

Electro-magnetic Induction (EMI) mapping technologies can be utilized to determine and develop site specific information to make informed decisions. This mapping technology is utilized to determine future courses of action for irrigation system design, application of irrigation water, and cropping alternatives



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Reference:

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USDA, Soil Conservation Service. 1993. National Engineering Handbook (NEH), Part 623, Chapter 2- Irrigation Water Requirements. Washington, D.C.

USDA. 1954. Diagnosis and Improvement of Saline and Alkali Soils. Agriculture Handbook No. 60. Washington, DC.